Remarks/Arguments

Status of the Claims

Claims 1-6, 8-16, 18-20, and 30-39 are pending in the application for examination on the merits. Claims 21-29 and 40-41 have been withdrawn from consideration as being drawn to non-elected subject matter. Claims 1, 8, 11, 13, 15, 15, 30, and 31 have been amended herein. Claims 1-6, 8-16, 18-20 and 30-39 stand rejected. For the reasons set forth below, Applicant submits that each of the pending claims is patentably distinct from the cited prior art and in condition for allowance. Reconsideration of the claims is therefore respectfully requested.

Claim Rejections - 35 U.S.C. §§ 102 and 103

Claims 1-6, 8-16, 18-20, 30-31, 34-36 and 38 stand rejected under 35 U.S.C. § 102(e) as being allegedly anticipated by U.S. Patent Application Publication No. 2005/0289617 by Safadi et al. ("Safadi"); and claims 32, 33, 37 and 39 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Safadi. As discussed below, Applicant respectfully traverses these rejections.

An aspect of the independent claims of the present application relates to decoding an audio/video stream from multiple sources (e.g., a television source and an IP source) using the same hardware decoder. Hardware decoders provide relatively high frame rates when compared to software decoding by general purpose microprocessors.

As stated on pages 2 and 3 of the present application, typical set-top-boxes (STBs) include DOCSIS cable modems to provide Internet access. By way of contrast

with the present application, such STBs typically include a central processing unit (CPU) to provide software decoding of IP-based media streams, which limits the frame rate of the displayed media stream and burdens the STB's CPU. As discussed in detail below, Applicant maintains that Safadi does not teach using the same hardware decoder to decode audio/video streams from both a television source and an IP source.

1. Safadi's reference to sharing resources such as decoders is unrelated to using a hardware decoder for IP-based audio/video streams.

Page 2 of the Office Action asserts that "Safadi first discloses one of the objects of this invention is to share the processing resource including decoding element (Para 19, lines 1-10)." However, Applicant asserts that the sharing contemplated by paragraph [0019] of Safadi refers to sharing resources when combining a personal versatile recorder (PVR) and a set-top box (STB), and is unrelated to the separate feature of receiving IP-based data through the internet. See paragraph [0019] (stating that the "personal versatile recorder of the present invention is preferably integrated with a set-top terminal to share," among other things, decoding). Combining a PVR and an STB will naturally lead to the sharing of certain resources. For example, separate PVRs and STBs would each include a decoder for decoding cable television signals. This cable television signal decoder may be shared in the combined PVR/STB taught by Safadi to decode television signals. However, this alone does not teach or suggest that the same hardware decoder is used to decode both television signals and IP-based signals.

2. Safadi teaches using a separate processor to "transcode" IP-based information.

In addition to sharing decoding for television signals, as indicated in paragraph [0019], Safadi goes on to teach in paragraph [0020] that the "recorder may also include ***co-processors (e.g., encoding and decoding devices)***. The central processing unit… selectively controls the encoding, *transcoding*," and other functions. (Emphasis added). See also, paragraph [0035], lines 17-24 (indicating that one of the functions of the central processing unit (104) is for "transcoding streaming audiovisual data").

Paragraph [0064] of Safadi provides an explanation for what is meant by transcoding, and states in part (emphasis added):

> Another function performed by the personal versatile recorder of the present invention is called transcoding. ***When audiovisual programming is streamed*** to the recorder from, for example, the ***internet***, the data of the audiovisual programming is compressed to facilitate transmission. The data must be ***decompressed for optimal display*** and compressed for storage on the disk (106). The compression and decompression of multimedia data is ***performed by the central processing unit (104)*** and is known as transcoding.

Clearly, Safadi teaches that the originally compressed state of the streaming audiovisual programming (e.g., in the format in which it is received through the internet) is decoded by the central processing unit (CPU) 104 for display and storage. Thus, Safadi fails to teach or suggest "wherein the hardware decoder is configured to decode the selected output from the stream selector so as to ***convert the television signal and the IP encapsulated audio/video data from a compressed state as provided by the first source and the second source, respectively***," as recited, among other things, in amended claim 1. (Emphasis added). Similar limitations are also found in the other independent claims.

3. Safadi does not teach decoding ***IP-based*** information received through the DOCSIS tuner 203 using the audio/video decoder 103 shown in FIG. 1.

Page 2 of the Office Action asserts that Safadi "further discloses using the decoder 103 to decode a stream video or web-cast video from the PVR and display it (Para 49)." However, Applicant respectfully disagrees. Paragraph [0049] states that if "the audiovisual data is streamed, e.g., web-cast, recording that data on the disk (106) may be done for caching purposes." However, this sentence goes on to indicate that storing the web-cast may be done for caching purposes so that it can be subsequently used ***by application software*** on a dynamic basis. Further, while paragraph [0049] indicates that "the audiovisual signal recorded on the disk (106) can be retrieved and processed through the audio/video decoder (103), paragraph [0064] makes it clear that IP-based data is first decompressed through transcoding before it is stored on the disk (106), as discussed above. Thus, the hardware decoder (103) does not decode it from its originally compressed state as provided through the internet.

Also, as discussed in Applicant's previous response, FIG. 1 of Safadi illustrates a PVR integrated with a set-top terminal 200. See, paragraph [0034], lines 1-3. The set-top terminal/personal versatile recorder 200 includes a primary tuner 202 to tune to a desired channel available from a cable system (paragraph [0037], lines 1-6), and a secondary tuner 203 (also referred to as a DOCSIS tuner 203) that allows web content to be retrieved (paragraph [0041]).

Safadi specifically teaches that programming received through the primary tuner 202 is sent through the decoder 103. For example, referring only to the primary tuner 202, paragraph [0038] indicates that the "programming can also be decoded through the audio/video decoder (103)." However, Safadi provides no such teaching for IP-

based signals received through the DOCSIS tuner 203. This is not surprising because, as discussed below, Safadi teaches that the CPU 104 executes software applications to handle the signals received through the DOCSIS tuner 203.

Page 3 of the Office Action also points to paragraph 38, lines 6-8 of Safadi for support of the assertion that the decoder 103 may decode output from either the primary tuner 202 or the DOCSIS tuner 203. However, paragraph [0038] of Safadi only teaches that programming received through the primary tuner 202 is decoded through the decoder 103. Paragraph [0038] is completely silent as to information received through the DOCSIS tuner 203.

4. Safadi specifically teaches that web content is handled by software applications executed by the CPU 104 shown in FIG. 1.

Unlike the programming received through the primary tuner 202, which Safadi specifically teaches is decoded by the decoder 103 (paragraph [0038]), the web-based content received through the DOCSIS tuner 203 is processed by software applications executed by the CPU 104.

To provide a background understanding of how web-based content (e.g., web pages, data files, streamed content) is handled, paragraph [0012] of Safadi teaches that "[d]ata files or streamed content cannot be displayed or played on a monitor (or television set) unless opened with an appropriate '***player***,' [i.e.], a software application designed to take the data as formatted in the file, or streamed content, and ***reproduce therefrom the encoded picture, music, sound, video***, etc." (Emphasis added).

Safadi then teaches how the web-based content received through the DOCSIS tuner 203 is reproduced by appropriate applications executed by the CPU 104. For

example, paragraph [0041] teaches that the stream from the DOCSIS tuner 203 is provided to a DOCSIS modem 101, which in turn communicates with the CPU 104 over the system bus 112. Paragraph [0060] clearly teaches that the CPU 104 executes the appropriate software to reproduce the encoded content. For example, the CPU 104 executes "image manipulation software" to display an image file. *Id*., lines 1-6. The CPU 104 can also execute "browser software" to display an HTML file. *Id*., lines 8-11. More importantly, the ***CPU 104 executes a "player program" to provide video and/or audio signals to the television set***. *Id*., lines 16-18. See also, paragraph [0061] (indicating that the CPU 104 executes an e-mail application to handle e-mail), and paragraph [0064] (indicating that the CPU 104 multimedia data in streamed audiovisual programming).

Thus, not only is Safadi silent as to web-based content being first decoded by the decoder 103, Safadi specifically teaches that encoded web-based content is rendered by appropriate software applications executed by the CPU 104. Thus, Applicant respectfully requests that the rejections based on Safadi be withdrawn.

5. Safadi does not teach a stream selector having a first input directly coupled to a first stream receiver, a second input indirectly coupled to a second stream receiver through a bus, and a select line coupled to a processor.

As shown in FIG. 4 of the present application, the claimed invention includes a stream selector 304 that receives audio/video streams from two different paths. The first path includes a first receiver (e.g., video tuner 106 and demodulator/demultiplexer 108) coupled ***directly*** to a first input of the stream selector 304. The second path includes a second receiver (e.g., modem device 124) coupled indirectly to a second

input of the stream selector 304 through a bus 404. Safadi does not teach any of these structural elements.

Specifically, Safadi does not disclose a stream selector. Page 3 of the Office action asserts that the CPU 104 and system bus 112 shown in FIG. 1 of Safadi acts as a stream selector. Clearly, however, the CPU 104 and the system bus 112 do not include the specific elements required by the amended independent claims, as presented herein.

Conclusion

Based at least on the foregoing, the independent claims are allowable over the art that has been cited and applied by the Examiner. Further, the claims that depend therefrom are also allowable for at least the same reasons. Applicants therefore request withdrawal of the rejections and allowance of the application at an early date.

Respectfully submitted,

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